What is claimed is:

1. A semiconductor device , wherein:

a semiconductor film has a polycrystal structure with a composition ratio of germanium to silicon being 0.1 atomic percent or more and 10 atomic percent or below; and

the {101} plane in the semiconductor film reaches 30% or more of all the lattice planes detected by Electron backscatter diffraction.

2. A semiconductor device, wherein:

a semiconductor film has a polycrystal structure with the composition ratio of germanium to silicon being 0.1 atomic percent or more and 10 atomic percent or below,

the {101} plane in the semiconductor film reaches 30% or more of all the lattice planes detected by Electron backscatter diffraction; and

the semiconductor film contains less than 5×10^{18} nitrogen atoms per cm^3, less than 5×10^{18} carbon atoms per cm^3, and less than 1×10^{19} oxygen atoms per cm^3.

3. A semiconductor device , wherein:

a semiconductor film has a polycrystal structure with the composition ratio of germanium to silicon being 0.1 atomic percent or more and 10 atomic percent or below;

the {101} plane in the semiconductor film reaches 30% or more of all the lattice planes detected by Electron backscatter diffraction; and

the semiconductor film is obtained by crystallizing an amorphous semiconductor film formed by intermittent electric discharge while setting the repetition frequency to 10 kHz or below and the duty ratio to 50% or below.

4. A semiconductor device, wherein:

a semiconductor film has a polycrystal structure with the composition ratio of germanium to silicon being 0.1 atomic percent or more and 10 atomic percent or below;

the {101} plane in the semiconductor film reaches 30% or more of all the lattice planes detected by Electron backscatter diffraction;

the semiconductor film contains less than 5×10^{18} nitrogen atoms per cm^3, less than 5×10^{18} carbon atoms per cm^3, and less than 1×10^{19} oxygen atoms per cm^3; and

the semiconductor film is obtained by crystallizing an amorphous semiconductor film formed by intermittent electric discharge while setting the repetition frequency to 10 kHz or below and the duty ratio to 50% or below.

5. A method of manufacturing a semiconductor device comprising the steps of:

forming an amorphous semiconductor film by plasma CVD through intermittent electric discharge, the amorphous semiconductor film containing germanium with a composition ratio of 0.1 atomic percent or more and 10 atomic percent or below to silicon; and

doping the amorphous semiconductor film with an element for promoting crystallization of the amorphous semiconductor film, and then subjecting the film to heat treatment to form a semiconductor film having a polycrystal structure,

wherein a channel formation region is formed form the semiconductor film having a polycrystal structure, and

wherein the {101} plane in the semiconductor film having a polycrystal structure reaches 30% or more of all the lattice planes detected by Electron backscatter diffraction.

6. A method of manufacturing a semiconductor device comprising the steps of:

forming an amorphous semiconductor film by plasma CVD through intermittent electric discharge, the amorphous semiconductor film containing germanium with a composition ratio of 0.1 atomic percent or more and 10 atomic percent or below to silicon, the amorphous semiconductor film containing less than 5×10^{18} nitrogen atoms per cm^3, less than 5×10^{18} carbon atoms per cm^3, and less than 1×10^{19} oxygen atoms per cm^3; and

doping the amorphous semiconductor film with an element for promoting crystallization of the amorphous semiconductor film, and then subjecting the film to heat treatment to form a semiconductor film having a polycrystal structure,

wherein a channel formation region is formed form the semiconductor film having a polycrystal structure, and

wherein the {101} plane in the semiconductor film having a polycrystal structure reaches 30% or more of all the lattice planes detected by Electron backscatter diffraction.

7. A method of manufacturing a semiconductor device comprising the steps of:

forming an amorphous semiconductor film by plasma CVD through intermittent electric discharge while setting the repetition frequency to 10 kHz or below and the duty ratio to 50% or less, the amorphous semiconductor film containing germanium with a composition ratio of 0.1 atomic percent or more and 10 atomic percent or below to silicon; and

doping the amorphous semiconductor film with an element for promoting crystallization of the amorphous semiconductor film, and then subjecting the film to heat treatment to form a semiconductor film having a polycrystal structure,

wherein a channel formation region is formed form the semiconductor film

having a polycrystal structure, and

wherein the {101} plane in the semiconductor film having a polycrystal structure reaches 30% or more of all the lattice planes detected by Electron backscatter diffraction.

8. A method of manufacturing a semiconductor device comprising the steps of:

forming an amorphous semiconductor film by plasma CVD through intermittent electric discharge while setting the repetition frequency to 10 kHz or below and the duty ratio to 50% or less, the amorphous semiconductor film containing germanium with a composition ratio of 0.1 atomic percent or more and 10 atomic percent or less to silicon, the amorphous semiconductor film containing less than 5×10^{18} nitrogen atoms per cm^3, less than 5×10^{18} carbon atoms per cm^3, and less than 1×10^{19} oxygen atoms per cm^3; and

doping the amorphous semiconductor film with an element for promoting crystallization of the amorphous semiconductor film, and then subjecting the film to heat treatment to form a semiconductor film having a polycrystal structure,

wherein a channel formation region is formed form the semiconductor film having a polycrystal structure, and

wherein the {101} plane in the semiconductor film having a polycrystal structure reaches 30% or more of all the lattice planes detected by Electron backscatter diffraction.

9. A semiconductor device according to claimed 1, wherein the thickness of the semiconductor film is 10 nm through 100 nm.

10. A semiconductor device according to claimed 2, wherein the thickness of the

semiconductor film is 10 nm through 100 nm.

11. A semiconductor device according to claimed 3, wherein the thickness of the semiconductor film is 10 nm through 100 nm.

12. A semiconductor device according to claimed 4, wherein the thickness of the semiconductor film is 10 nm through 100 nm.

13. A method of manufacturing a semiconductor device according to claim 6, wherein the thickness of the semiconductor film is 10 nm through 100 nm.

14. A method of manufacturing a semiconductor device according to claim 7, wherein the thickness of the semiconductor film is 10 nm through 100 nm.

15. A method of manufacturing a semiconductor device according to claim 8, wherein the thickness of the semiconductor film is 10 nm through 100 nm.

16. A method of manufacturing a semiconductor device according to claim 9, wherein the thickness of the semiconductor film is 10 nm through 100 nm.

17. A semiconductor device according to claim 1, wherein the semiconductor film forms a channel formation region.

18. A semiconductor device according to claim 2, wherein the semiconductor film forms a channel formation region.

19. A semiconductor device according to claim 3, wherein the semiconductor film forms a channel formation region.

20. A semiconductor device according to claim 4, wherein the semiconductor film forms a channel formation region.

21. A semiconductor device according to claim 5, wherein the semiconductor film forms a channel formation region.

22. A semiconductor device according to claim 1, wherein said semiconductor device is incorporated into an electric device selected from the group consisting of a portable data terminal, a video camera, a still camera, a personal computer, a TV and a projector.

23. A semiconductor device according to claim 2, wherein said semiconductor device is incorporated into an electric device selected from the group consisting of a portable data terminal, a video camera, a still camera, a personal computer, a TV and a projector.

24. A semiconductor device according to claim 3, wherein said semiconductor device is incorporated into an electric device selected from the group consisting of a portable data terminal, a video camera, a still camera, a personal computer, a TV and a projector.

25. A semiconductor device according to claim 4, wherein said semiconductor device is incorporated into an electric device selected from the group consisting of a portable data terminal, a video camera, a still camera, a personal computer, a TV and a projector.

26. A method of manufacturing a semiconductor device according to claim 5, wherein said semiconductor device is incorporated into an electric device selected from the group consisting of a portable data terminal, a video camera, a still camera, a personal computer, a TV and a projector.

27. A method of manufacturing a semiconductor device according to claim 6, wherein said semiconductor device is incorporated into an electric device selected from the group consisting of a portable data terminal, a video camera, a still camera, a personal computer, a TV and a projector.

28. A method of manufacturing a semiconductor device according to claim 7, wherein said semiconductor device is incorporated into an electric device selected from the group consisting of a portable data terminal, a video camera, a still camera, a personal computer, a TV and a projector.

29. A method of manufacturing a semiconductor device according to claim 8, wherein said semiconductor device is incorporated into an electric device selected from the group consisting of a portable data terminal, a video camera, a still camera, a personal computer, a TV and a projector.

30. A semiconductor device according to claim 1, wherein said semiconductor device is an EL display.

31. A semiconductor device according to claim 2, wherein said semiconductor device is an EL display.

32. A semiconductor device according to claim 3, wherein said semiconductor device is an EL display.

33. A semiconductor device according to claim 4, wherein said semiconductor device is an EL display.